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Female sterilisation clip

Patent number: GB2297487
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- international: A61F6/20
- european: A61B17/122, A61F6/20C

Application number: GB19950001879 19950131

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Abstract of GB2297487

The clip 1, which is for occluding the Fallopian tube, carries or otherwise incorporates a short- or long-acting local anaesthetic. The latter may be in the form of microcapsules or a gel and may be applied to the inner surfaces 3 of the clip or coated over the entire clip. The surfaces 3 may be impregnated with the anaesthetic or grooves or indentations may be formed in the surfaces of the clip to retain the gel. The clip has an outer layer 2 of titanium lined with silicone rubber, a hinge 4 and a latch 5.

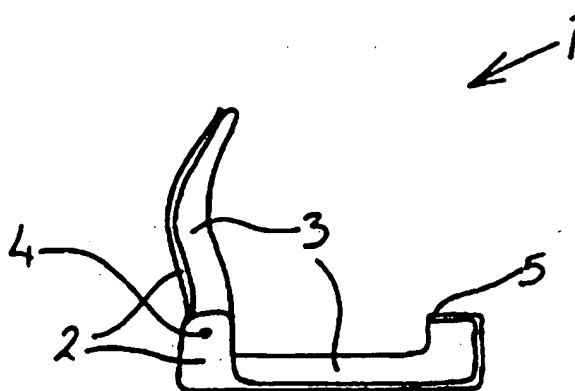


FIGURE 1

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US 4489725 A US 4485814 A

(58) Field of Search
UK CL (Edition O) A5R REL
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ONLINE:WPI,CLAIMS

(54) Female sterilisation clip

(57) The clip 1, which is for occluding the Fallopian tube, carries or otherwise incorporates a short- or long-acting local anaesthetic. The latter may be in the form of microcapsules or a gel and may be applied to the inner surfaces 3 of the clip or coated over the entire clip. The surfaces 3 may be impregnated with the anaesthetic or grooves or indentations may be formed in the surfaces of the clip to retain the gel. The clip has an outer layer 2 of titanium lined with silicone rubber, a hinge 4 and a latch 5.

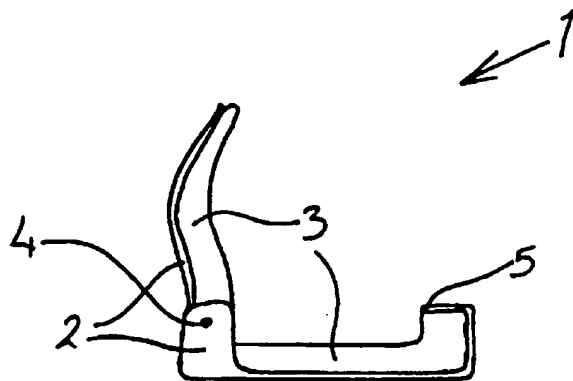


FIGURE 1

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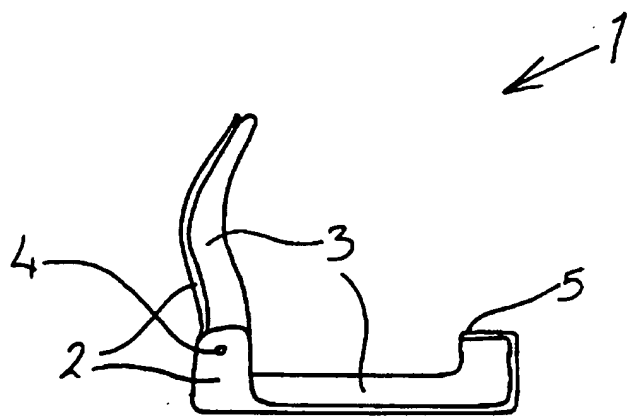


FIGURE 1

STERILIZATION DEVICE

Field of the Invention

This invention relations to a device for female sterilization.

Background to the Invention

5 Tubal sterilization is the world's most popular contraceptive method and is used by many millions of women of reproductive age. It is carried out by laparoscopy or open laparotomy using electrocoagulation or mechanical methods.

10 Increasingly, mechanical methods have replaced electrocoagulation owing to the risk of thermal injury (for example to the bowel or bladder) associated with the latter. Mechanical methods also significantly reduce the risk of subsequent ectopic pregnancies and some other post-operative complications.

15 Clips of various kinds are used in mechanical sterilization methods, for example the Hulka-Clemens clip, the Filshie clip, the Falope ring etc. Their construction and methods of use are well-known in the art and will not be described in detail here.

Female sterilization may be performed under general or local anaesthesia. However, with the increasing desire to reduce the time each patient needs to

5 spend in hospital, the use of local anaesthetic is gaining in popularity. It is already used extensively in the developing world because of its simplicity and safety. The local anaesthetic (for example lignocaine) is injected into the abdomen ensuring that the injection infiltrates all layers of the abdomen down to the peritoneum.

10 One major disadvantage of tubal sterilization using mechanical devices is the increased risk of post-operative pain due to the pressure of the clip on the fallopian tubes. The pain is local to the vicinity of the clip and may last for several weeks. It is thus an object of the present invention to provide a female sterilization clip which reduces the severity of post-operative pain.

Summary of the Invention

15 According to a first aspect of the present invention there is provided a female sterilization clip, carrying or otherwise incorporating a local anaesthetic, the arrangement being such that when the clip is introduced into the patient so as to occlude her fallopian tubes in the correct manner, the anaesthetic has the desired effect.

Preferably, all or part of one or more surfaces of said clip is or are impregnated with said local anaesthetic.

20 In a preferred form, at least one surface of said clip is adapted to receive said local anaesthetic, for example in one or more grooves or indentations. Preferably, said local anaesthetic is in the form of a gel which can be applied to said surface.

25 In a further preferred form, said local anaesthetic is contained within microcapsules which are adapted to enable said local anaesthetic to remain inactive until the fallopian tube is occluded.

Brief Description of the Drawing

Figure 1 shows a schematic view of a Filshie clip.

Description of the Preferred Embodiment

5 One particular type of clip will be used in the following description; this is by no means intended to restrict the application of the invention to such a clip and is given by way of example only.

10 The Filshie clip shown in Figure 1 is made from an outer layer 2 of titanium lined on the inner surfaces 3 with silicone rubber. There is a hinge 4 at one end and a latch 5 at the other. The clip 1 is closed across the fallopian tube (not shown) and latched shut to maintain occlusion.

According to the present invention, the sterilizing clip carries or incorporates a local anaesthetic. The anaesthetic medication may be lignocaine (short-acting), bupivacaine, etidocaine (both long-acting), or any other anaesthetic agent which may be used safely in this area.

15 The anaesthetic may be in the form of a gel which can be applied to at least the inner surfaces 3 of the clip 1 prior to insertion into the patient. The entire clip 1 could be coated in the gel if desired.

One or more grooves, indentations or other recesses in the surfaces of the clip could be used to retain a quantity of anaesthetic gel.

20 Alternatively, the inner surfaces 3 of the clip 1 could be impregnated with the anaesthetic. This eliminates the need for the surgeon to apply anaesthetic gel to the clip; the procedure could thus be simplified by the provision of clip and anaesthetic together in a sterile pack ready for use. This method could be of particular use in developing countries where simple and safe
25 procedures are essential in locations where complex/expensive equipment

and facilities may not be available. Again the entire clip 1 could be impregnated with the anaesthetic if desired.

5 Obviously, the effectiveness of post-operative pain reduction will depend upon the type of anaesthetic used. If a short-acting anaesthetic is used, it may be preferable to contain the active agent in microcapsules for example held in a gel. In this way, the anaesthetic can be released by the action of the surfaces of the clip moving against one another and the fallopian tube, thus providing a controlled release of anaesthetic in the precise location where it is required.

10 Association of a local anaesthetic in this way to a female sterilization clip thus enables the anaesthetic to be applied directly to the vicinity of the clip; this being the main site of post-operative pain. In this way, post-operative pain should be significantly reduced.

CLAIMS

1. A female sterilization clip, carrying or otherwise incorporating a local anaesthetic, the arrangement being such that when the clip is introduced into the patient so as to occlude her fallopian tubes in the correct manner the anaesthetic has the desired effect.
2. A female sterilization clip according to Claim 1 wherein all or part of one or more surfaces of said clip is or are impregnated with said local anaesthetic.
3. A female sterilization clip according to Claim 1 or Claim 2 wherein at least one surface of said clip is adapted to receive said local anaesthetic, for example in one or more grooves or indentations.
4. A female sterilization clip according to Claim 3 wherein said local anaesthetic is in the form of a gel which can be applied to said surface.
5. A female sterilization clip according to any of the preceding Claims wherein said local anaesthetic is contained within microcapsules which are adapted to enable said local anaesthetic to remain inactive until the fallopian tube is occluded.
6. A female sterilization clip substantially as described herein with reference to and as illustrated by the accompanying drawing.



The Patent Office

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Application No: GB 9501879.2
Claims searched: 1-6

Examiner: L.V.Thomas
Date of search: 18 April 1996

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.O): A5R (REL)

Int CI (Ed.6): A61B 17/122; A61F 6/20; A61L 17/00, 31/00

Other: ONLINE : WPI, CLAIMS

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
Y	US 4489725 (Casey et al.) see col.1 ll.22-42	1-4
Y	US 4485814 (Yoon) see col.1 l.67 - col.2 l.27 and col.4 ll.7-17	1-4

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.